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Increasing Intersputnik's Competitiveness: Motives, Prospects, and Implications

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An Intelligence Assessment

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*SOV 89-10078X
October 1989*

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Increasing Intersputnik's Competitiveness: Motives, Prospects, and Implications

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An Intelligence Assessment

This paper was prepared by [] Office of
Soviet Analysis. A contribution was provided by
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Comments and queries are welcome and may be
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**Increasing Intersputnik's
Competitiveness: Motives,
Prospects, and Implications**

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Key Judgments

*Information available
as of 1 August 1989
was used in this report.*

Moscow is attempting to expand the use of its Intersputnik satellite telecommunications system in the West and in the Third World, but its efforts thus far have produced meager results. The Soviets hope to increase international interest in Intersputnik's television transmission capability, as well as in Soviet television programs broadcast via the system, which in turn might lead to the purchase of other Intersputnik services, including data, facsimile, video, and telephone transmissions. Moscow's goals for expanding Intersputnik are to increase Soviet prestige in the field of telecommunications, earn hard currency, gain improved access to Western proprietary information available over international telecommunications channels, and shape world opinion by increasing the audience for its television programs.

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Intersputnik's technical capabilities do not match those of the International Telecommunications Satellite Organization (INTELSAT), which carries nearly all of the international telecommunications services. Nonetheless, the Soviets believe that, by offering Intersputnik services at below-market prices, they can get a foot in the door. They recently have approached US telecommunications companies with offers to lease Intersputnik satellite channels on a long-term basis; the use of an Intersputnik television channel by a US broadcasting company during President Gorbachev's visit to Cuba in March is one indication of growing Western interest in some of the system's services. Moscow's chances for expanding the use of Intersputnik services in the West, however, will continue to be hampered by the limited number of countries with which prospective customers can communicate directly and by the perception that messages sent across Soviet telecommunications channels would be vulnerable to interference or interception.

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The best opportunities for expanding Intersputnik are in Third World countries, where its low cost is affordable and simple technology is sufficient for their telecommunications needs. Moscow is offering Intersputnik satellite channels to Third World countries to improve their domestic telecommunications networks; as incentives, it has provided some customers with free ground station equipment and access to Soviet satellite channels. To better market their services, the Soviets have sought Western assistance in analyzing the telecommunications needs of certain regions.

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The most promising way for Moscow to increase the use of Intersputnik services in the West is by leasing its audio and video channels for transmitting television newsclips from the Soviet Union and Bloc countries. Western demand for real-time reporting of events in these countries is growing, particularly in light of the political and societal changes occurring within the Bloc. As a result, Western television companies will come under increasing pressure to supply coverage of Bloc events and almost certainly will turn to Intersputnik for Soviet newsclips to supplement their regular broadcasting. [REDACTED]

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Should Western firms begin using Intersputnik for business telecommunications, the Soviets would have easier access to proprietary information through links to data bases and networks. If the United States begins using Intersputnik for civilian telecommunications, the Soviets could gain easier access to those US nonsecure military telecommunications that are normally transmitted over available US commercial networks. Through such access, Moscow would be able to analyze the origin and destination of traffic sent over Intersputnik channels more easily than if those communications were transmitted by other means, such as landlines or INTELSAT satellites. This analysis, if combined with data from other sources, could make it easier for the Soviets to gain insight into US intentions worldwide. [REDACTED]

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Despite these efforts, the Soviets probably do not expect a large financial payoff in the near term. They have not sold any satellites or satellite transponders to date, and the inferior quality of their equipment and limited network size will almost certainly compel them to continue offering Intersputnik services free or at below-market value to gain new customers. Moreover, the Soviets will continue to seek Western telecommunications technology, thus using up the little hard currency they may earn. Nonetheless, they want Intersputnik to become profitable and probably will raise prices to market levels if and when they perceive Intersputnik services are equivalent to those available in the West. [REDACTED]

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Secret**Scope Note**

This paper assesses the Soviet attempt under President Gorbachev to enter the West's satellite telecommunications market and expand the Intersputnik telecommunications satellite system in the Third World. It does not compare the Soviet satellite system with INTELSAT from an economic standpoint, nor does it estimate the USSR's potential financial earnings from its satellite system. Rather, it focuses on the motives, prospects, and implications of the Soviets' attempt to broaden their role in the world satellite telecommunications market.

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Increasing Intersputnik's Competitiveness: Motives, Prospects, and Implications

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Slow Growth of Intersputnik

The Soviets recently have approached US telecommunications companies with offers to sell satellite telecommunications services—such as telephone, telegraph, facsimile, data, and television transmissions—at prices below those charged by the International Telecommunications Satellite Organization (INTELSAT). [] the Soviets have said they especially would like to provide dedicated satellite links to US businesses involved in joint ventures with the USSR; however, they are interested in selling their services to any US company requiring long-distance satellite links to locations worldwide. Several US telecommunications companies are seriously considering the offer, and one—IDB Communications Group—has received INTELSAT approval to purchase on a short-term basis some Intersputnik services for resale to US businesses and broadcasting companies. []

The Soviets are offering the sale of these services through the agency Glavkosmos,¹ which was set up in 1985 to market Soviet space services abroad, in conjunction with Litsensintorg, the USSR's primary foreign trade association for the licensing of technology. The marketing representative of Soviet space services in the United States is Space Commerce Corporation, located in Houston. []

The Soviets established Intersputnik in 1971 as a Bloc counterpart to INTELSAT. They use the Intersputnik system—which consists of earth stations and satellite technology—to transmit international civilian telecommunications. Intersputnik is not mentioned in the marketing brochures the Soviets have distributed to prospective customers; however, any Soviet satellite telecommunications services bought by the United States or by other countries most likely would be

¹ Glavkosmos is an abbreviation of the Main Administration for the Creation and Use of Space Technology for the National Economy and Scientific Research. []

transmitted via Intersputnik. The Moscow-based Intersputnik organization allocates and coordinates the satellite channels used by the Soviet Union and other user countries. []

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Unlike INTELSAT, which owns its satellites, Intersputnik leases its satellites from the USSR, which manufactures, launches, and maintains them in space.² These satellites also carry Soviet domestic and military telecommunications. The ground station equipment in Intersputnik's network is owned and operated by the countries in which it is located and does not have to be purchased from the Soviets. []

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During most of the 1970s, Intersputnik served only its charter members: the Soviet Union, Poland, Czechoslovakia, East Germany, Hungary, Romania, Bulgaria, Mongolia, and Cuba. It provided these countries with the capability to communicate with each other via telephone and telegraph, using leased satellite channels. Intersputnik's satellite channels also could be leased for facsimile needs, such as sending images of newspaper pages over long distances. Member countries could lease Intersputnik's audio and video channels for transmitting television and radio programs. In addition, for the price of leasing the satellite channels, member countries could receive the daily *Intervision* television news program, produced by the Soviet-backed International Radio and Television Organization (OIRT). Intersputnik and OIRT member countries contributed the television feeds for *Intervision*. []

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In the late 1970s Moscow began offering financial and other incentives to attract those developing countries in which it had a political, economic, or military

² Intersputnik presently leases capacity on two of its nine geosynchronous Gorizont satellites: Stsionar-4 over the Atlantic Ocean, located at 14 degrees west, and Stsionar-13 over the Indian Ocean, located at 53 degrees east. []

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Glavkosmos—The Soviet Union's Space Broker

When the Soviets decided in 1985 that space could be big business, they created Glavkosmos. The lure of hard currency earnings to boost a stagnant economy, coupled with a marketable-quality space capability, provided the initial impetus. Glavkosmos at first had little success in breaking the Western monopoly on commercial space trade, but in early 1986 Western rocket failures created a remarkable window of opportunity that the Soviets were quick to exploit.

[REDACTED]

In conjunction with the ministry overseeing foreign trade, Glavkosmos began a worldwide, hard-sell marketing campaign that featured cut-rate launches and insurance rates so low that it became obvious the agency was being subsidized by the Soviet Government. The sales blitz has since become more sophisticated and successful at netting a growing list of customers for an ever-expanding range of services. The foreign trade firm Litsensintorg, created in 1979 to handle export/import operations and licensing of inventions and technology, acts as the financial agent for Glavkosmos.

[REDACTED]

Glavkosmos provides launch services on both the national and international level. At home, it serves as a planning and review agency for space use and research. It acts as a coordinator and point of contact between space-related organizations and Soviet industry. It ensures that technology and personnel are available to meet Soviet space commitments, determines scheduling of launches, and selects the most suitable vehicle for orbiting of scientific payloads. Glavkosmos operates its own design bureaus for spacecraft and launchers and oversees the integration of scientific payloads from national laboratories with industry-provided launchers.

[REDACTED]

For its foreign clients, Glavkosmos can lease its own or launch foreign communications, weather, or geodetic satellites; control these satellites in orbit; and receive and process information from them. It will

conduct foreign-proposed research on Soviet space stations in such areas as materials processing and remote sensing of earth resources. Glavkosmos will even give foreign cosmonauts an eight-day ride in space for an average price of \$10 million. It has also offered low-resolution digital imagery from its RESURS-O satellites, comparable to early versions of US LANDSAT imagery. For a time, the agency was hawking 5-meter-resolution space photography of a foreign client's home country, but a decision was apparently made within the Soviet hierarchy to restrain Glavkosmos from that activity. The foreign trade company Soyuzkarta now seems to have exclusive rights to Soviet film-based space photography for sale.

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interest to the Intersputnik network. Countries no longer had to join the Intersputnik organization to use its satellite system. The Soviets began providing Intersputnik services to Vietnam and Algeria in 1979 and to Afghanistan, Iraq, Laos, North Korea, Syria, South Yemen, Nicaragua, Cambodia, Angola, and Libya in the 1980s.³ Moscow was interested in providing close, expedient communications with the governments of those countries and with Soviet officials based there, as well as ensuring the regular reception of Soviet television and radio news broadcasts. The developing countries were particularly interested in the cheap, simple way Intersputnik allowed them to improve their domestic telecommunications capabilities—chiefly by providing the means to transmit telephone and television services from major population centers to rural locations, avoiding costly land-lines. []

From the late 1970s through the mid-1980s, Western countries were not interested in purchasing Intersputnik's business telecommunications services because they preferred INTELSAT. Soviet satellite technology was considered to be at least 10 years behind the West's. Moreover, because INTELSAT is a cooperative that distributes profits and voting power to its members in accordance with their use of the system, Western countries did not want to divert business by using another satellite system. In addition, chilled East-West political relations following the Soviet invasion of Afghanistan in 1979 and the imposition of martial law in Poland in 1981 resulted in a low volume of East-West trade and business, providing little incentive for Western countries to establish telecommunications links to the Soviet Union and its allies. []

Nonetheless, there was some Western interest in receiving Soviet television feeds transmitted via Intersputnik for commercial and educational purposes, particularly feeds of sporting and special events within the Soviet Bloc. For example, in 1984 the Turner Broadcasting System, Inc., obtained permission from the US Federal Communications Commission (FCC) to receive Soviet television feeds of the Friendship

³ Algeria, Iraq, Cambodia, Angola, and Libya are nonmember Intersputnik users. []

Incentives Offered by Moscow

Moscow has been willing to provide Intersputnik's members and nonmembers with a variety of free services in order to increase the system's appeal. At an international meeting on telecommunications in Paris in May 1984, the Soviets offered free use of Intersputnik for information exchange among Third World press associations. The Soviets have offered Cuba and Vietnam free access via satellite to a data base of the International Scientific and Technical Information Center in Moscow and have provided Cambodia with free relay stations for retransmitting telecommunications received from Intersputnik to remote areas of the country. The Soviets have also provided free training in the operation of ground station equipment to technicians from developing countries. []

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Moscow has been willing to coordinate satellite hook-ups with INTELSAT for countries requiring telecommunications links to countries outside the Intersputnik network. For example, when Vietnam wanted to transmit television to Tokyo in 1986, the Soviets arranged for Vietnam's television signals to be sent via Intersputnik to Moscow and then from Moscow to Tokyo via INTELSAT. []

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The Soviets have also been willing to use Western equipment in Intersputnik ground stations to make them more compact, efficient, easily serviced, and reliable. For example, the Soviets have permitted a Japanese company to construct ground stations in Algeria and Iraq. []

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Games from Moscow for rebroadcast on Cable News Network (CNN). In 1985 the FCC gave Turner Broadcasting permission to receive Soviet television feeds on a regular basis for six months for use on CNN. Some US universities at this time began receiving Soviet television broadcasts to supplement their educational curriculums. []

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The Western organizations interested in receiving Soviet-sponsored television feeds did not want to join Intersputnik or purchase its ground station equipment, however, because specialized equipment manufactured and sold by Western firms provided them with free access to the feeds. []

As a result, the Soviets did not make money from the West's reception of their television signals. Although they could have prevented the free reception in the West of their television broadcasts through technical means, the Soviets chose not to, probably because they viewed it as an opportunity to get their message across to a wider world audience and improve their image in the West. []

Increased Services Under Gorbachev

Under President Gorbachev the Soviets have been trying to make Intersputnik more competitive with INTELSAT and expand its network in the West and the Third World by broadening the range of services offered. They are now more flexible and willing to deal with Western and Third World customers, probably because they believe opportunities for expanding their role in world telecommunications and for increasing hard currency earnings are greater under conditions of *glasnost* and improved East-West relations. According to a sales brochure the Soviets distributed at an international space commerce conference held in Switzerland in February 1988, they will now manufacture and launch telecommunications satellites for customers from any country. *The New York Times* reported in September 1987 that the Soviets charge about \$40 million for the purchase and launch of one of their Gorizont telecommunications satellites. A comparable Western satellite sells for about \$30 million, plus \$40 million for launch. In addition, Moscow is now willing to lease whole transponders on its satellites through Intersputnik.⁴ In 1989 the Soviets began marketing an improved telecommunications satellite called Glavstar, which has yet to be launched. []

⁴ A transponder is a combination receiver, transmitter, and antenna package that is physically part of a telecommunications satellite.

Telecommunications Emphasis in the Third World

The Soviets recognize that a potentially large market for satellite telecommunications services exists in the Third World. Developing countries are increasingly seeking improved domestic and international telecommunications capabilities as they pursue economic development, and they probably will turn to satellite telecommunications, rather than expensive landlines and microwave relay systems, for communicating with remote areas within their borders. The Soviets probably are confident that their satellite telecommunications technology is sufficient for Third World needs and recognize that, in the near term, their chances for acquiring customers are greater in the Third World than in the West. In 1987, Angola asked the Intersputnik organization to provide information about establishing a domestic broadcast network. Iran expressed interest in 1988 in using Intersputnik for improving its domestic telecommunications capability. That same year, the Soviets negotiated with a Western firm for assistance in analyzing the satellite telecommunications markets in Latin America and the Pacific region to determine how to make Soviet services more attractive to countries in those regions. []

The Third World market for receiving international radio and television broadcasts via satellite for domestic retransmission is also growing. An increasing number of developing countries have expressed interest in receiving Soviet-produced television programs. In 1987, Intersputnik gave China Central Television free use of a satellite for three months so that China could receive Soviet-sponsored television and transmit its own television to the East Bloc. In some cases, the Soviets have provided countries with free television-receiving ground station equipment, probably in hopes that they will eventually purchase other telecommunications services. For example, as a result of lobbying efforts by Intersputnik representatives in Africa, Nigeria in 1985 accepted free ground station equipment for receiving television transmissions. []

[] The Soviets may eventually decide to make Third World reception of their programming

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profitable by charging a fee and scrambling transmissions in the same way some US broadcasting companies scramble their broadcasts to prevent unauthorized reception. []

The Soviets also see a market for broadcasting Third World television newsclips and programs abroad. For example, the Soviets offered Mexico a satellite channel for coverage of the 1986 World Soccer Championship held in Mexico. Moscow has also offered Intersputnik's television channels during off-hours to developing countries that want to broadcast their national television abroad. What the Soviets consider downtime is regular business hours for audiences in the Western Hemisphere, due to the time difference; for example, neither the Soviets nor the OIRT transmit television from about 2200 to 0100 hours GMT via the Intersputnik satellite over the Atlantic Ocean. According to Havana radio in August 1986, during Soviet downtime, Cuba leases Intersputnik's television channel to broadcast its television program *Cubavision* to the Caribbean, Central America, and North America. Developing countries may increasingly see the transmission of their television abroad as a way to boost national pride. According to *Cubavision* Director Daniel Osirio in an interview in January 1989, broadcasting *Cubavision* via Intersputnik helps "to further Cuba's image in foreign countries." []

The Soviets apparently see some demand for temporary services in the Third World and seem willing to provide such services to countries that normally use INTELSAT. When a US-built Indian satellite failed after launch in 1982, the Soviets stepped in and offered Intersputnik television transmission services; India used Intersputnik for 10 months until the United States could launch a replacement satellite. The Soviets probably believe that some temporary customers will become permanent []

In the West: Television Transmission Services

The Soviets are focusing on improving their television and radio broadcasts to the West as a way to attract new customers. This year they have begun broadcasting a new radio program via satellite that they hope will lure Westerners to install equipment for receiving free transmissions from Soviet Gorizonts. The program is the first to be broadcast abroad in Russian

and is intended for the more than 215 million people living outside the Soviet Union who understand Russian and for those learning Russian, according to Moscow radio in December 1988. The program is broadcast hourly and includes international news and cultural and scientific reporting presented in a franker manner than that of previous Soviet radiobroadcasts. The USSR is also setting up a new television network to broadcast programs via satellite. The Soviets hope these programs, which will feature foreign advertisements, will eventually turn a profit. []

Moscow undoubtedly would like growing East-West commercial ties to result in Western purchases of Soviet satellite telecommunications services. []

[] there are approximately 350 US firms and 350 West European companies that currently have commercial ties to the Soviet Union and that will require increased international telecommunications circuits in the near future. Although INTELSAT could handle significant growth in US-Soviet business satellite telecommunications, the Soviets nevertheless will try to capture a share of the market, possibly by offering free satellite channels initially as part of joint-venture agreements. In May 1989 *Pravda* reported that the Soviets signed a joint-venture agreement with a British telecommunications firm for the installation of 100 pay phones—operable by foreign credit cards—in Moscow, so Western businessmen will have better access to international telecommunications lines. Although these pay phones are designed to use INTELSAT satellite channels, they probably could be modified to operate in the Soviet satellite system. []

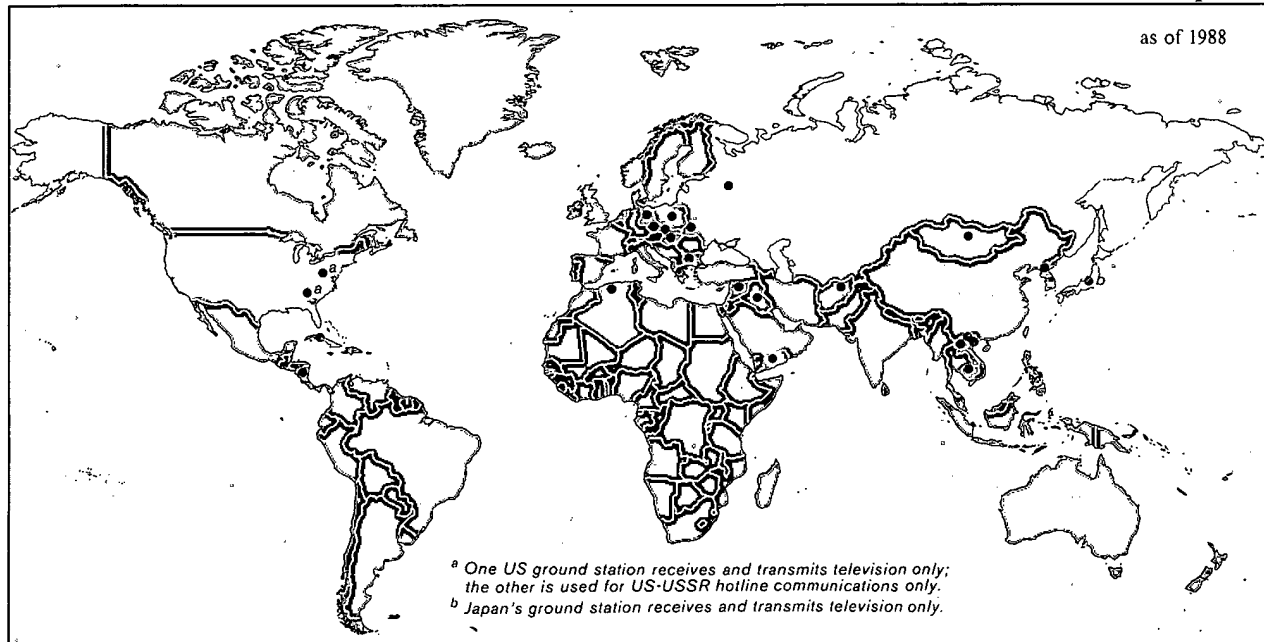
Marketing Pluses and Minuses

Low Cost, Simplicity, and Excess Capacity. The Soviets apparently hope that Intersputnik's below-market prices for satellite telecommunications services will attract new customers. Whereas INTELSAT uses a complex rate structure based on cost for leasing its satellite channels, Intersputnik charges a flat tariff. In 1987, Spartak Kurilov, then director of Intersputnik, told a UN subcommittee that Intersputnik tariffs were about one-half to one-third those of

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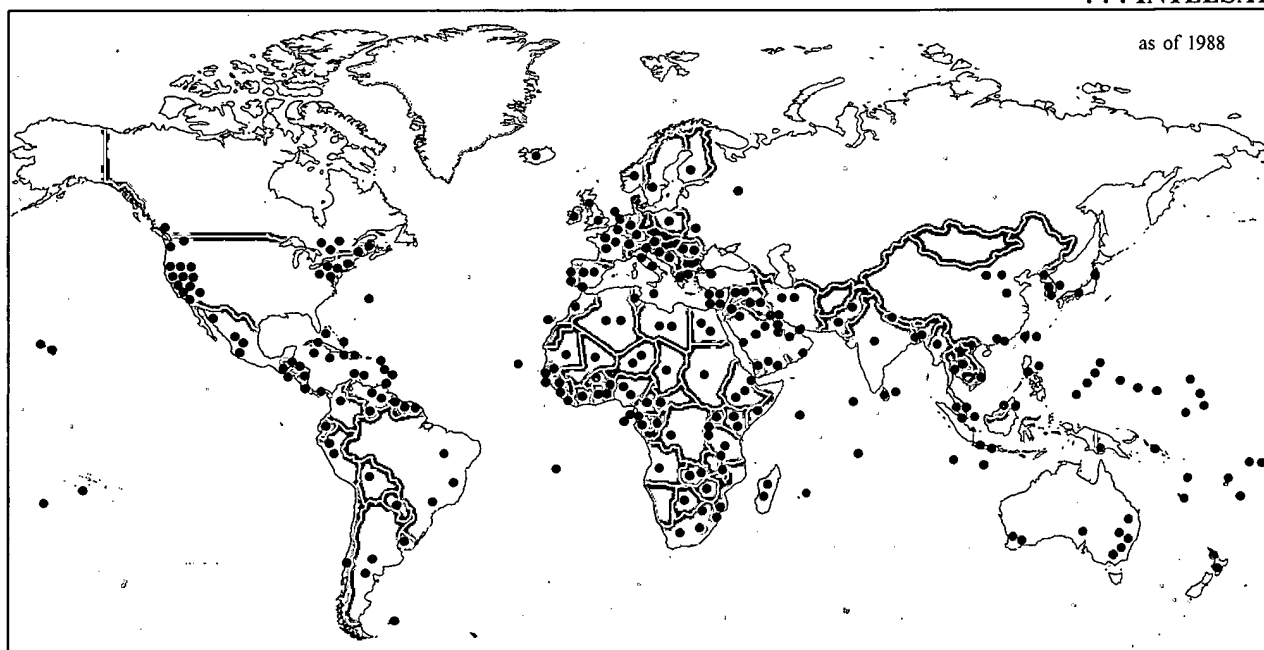
Figure 1
Comparison of Ground Station Networks . . .

. . . Intersputnik



There are 24 ground stations in the Intersputnik network.

. . . INTELSAT



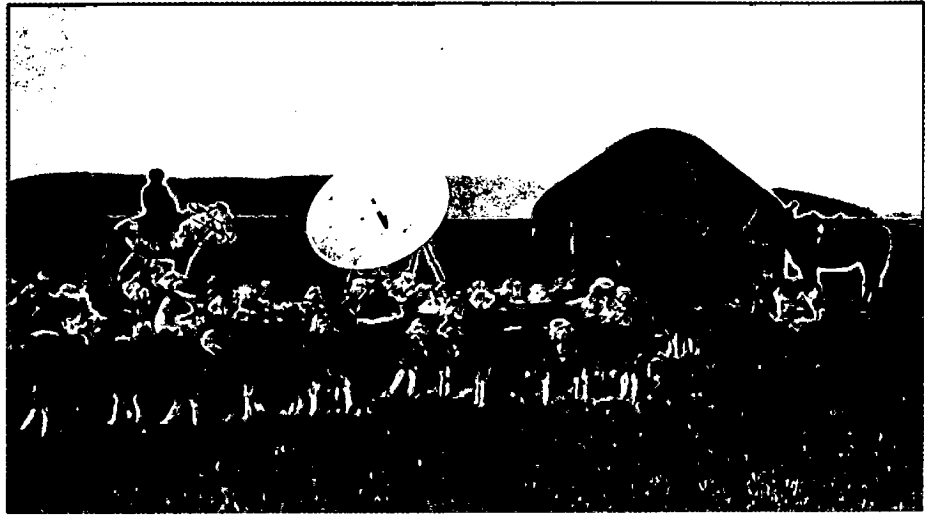
In contrast, INTELSAT's ground stations are located in over 170 countries and territories worldwide.

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Figure 2. Moskva ground station for receiving television broadcasts only ☐



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INTELSAT.⁵ We believe that the Soviets charge US and other Western telecommunications firms the same flat tariff that they charge other Intersputnik users. ☐

Soviet satellite technology is much simpler than its Western counterpart and, therefore, requires less expensive ground station equipment and less complex and costly training. Soviet satellite transponders transmit strong telecommunications signals that can be received by small, easy-to-operate antennas—an advantage for developing countries whose technicians may not be trained to operate and maintain complicated equipment and whose governments cannot afford expensive training (see figure 2). ☐

With nine active Gorizont telecommunications satellites currently in space, the Soviets have more than enough available satellite capacity to meet increased demand for Intersputnik services; it is unlikely that Soviet domestic needs will use up this capacity in the near term. Moreover, Moscow intends to increase the

the number of Gorizont satellites in orbit, as evidenced by the number of satellite positions they have reserved through the International Frequency Registration Board (IFRB).⁶ ☐

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Technical Limitations and Security Concerns. The Soviets currently can offer direct telecommunications links to only those 18 countries that have ground stations operating in the Intersputnik network; thus the number of countries with which prospective customers can communicate is limited. In contrast, INTELSAT can provide links to over 170 countries and territories worldwide, 10 of which are also in the Intersputnik network. Moreover, the two satellites used by Intersputnik do not provide global coverage; the footprints of the two satellites, which are located over the Atlantic and Indian Oceans, do not include the western half of North America.⁷ If demand warranted, however, Intersputnik could lease transponders on either of two Soviet geosynchronous satellites over the Pacific Ocean, thus providing coverage for this region. ☐

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⁵ A Western journal reported in 1985 that the fee Intersputnik charged for the lease of one voice circuit was equal to \$11,615 annually, as compared with the annual fee of about \$19,350 charged by INTELSAT. Earth station operations for a video channel cost \$383 for the first 10 minutes and \$11 for each additional minute on Intersputnik, compared with about \$968 and \$30, respectively, for the same services on INTELSAT. ☐

⁶ The Soviets have reserved 12 positions for commercial telecommunications satellites, only nine of which are currently filled. ☐

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⁷ A satellite footprint is the geographic area on the earth's surface to which a satellite in space transmits its signals. ☐

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Secret**Intersputnik and INTELSAT Satellite Features**

| | Intersputnik | | INTELSAT | |
|-------------------------|-----------------------------------|-------------------------------|--|---|
| | Gorizont | Glavstar ^a | INTELSAT-V | INTELSAT-VI |
| Satellite weight | 2,000 kg | 1,800 to 2,200 kg | 1,000 kg | 2,000 kg |
| Operational life | 3 years minimum | 3 years minimum | 10 years | 10 years |
| Active transponders | 6 C-band 1 Ku-band 1 L-band | 12 C-band 11 Ku-band | 21 C-band 6 Ku-band | 36 C-band 10 Ku-band |
| Spare transponders | Backups for all of the above | Unused transponders | 12 C-band 4 Ku-band | 12 C-band 4 Ku-band |
| Channels | 20,000 | Unknown | 12,000 for telephone plus 2 for TV | 120,000 for telephone plus 3 for TV |
| Types of coverage | Global coverage and spot beam | Global coverage and spot beam | C-band: 2 global, 2 hemispheric, 2 zone beams. Ku-band: 2 steerable spot beams | 2 hemispheric beams, 4 zone beams, 2 steerable spot beams |
| Ground station antennas | 11- or 12-meter | 11- or 12-meter | 13-, 15-, or 18-meter | 13-, 15-, or 18-meter |

^a Not yet launched.

Moscow's ability to expand Intersputnik's usage in the West and the Third World is also restricted by the technical limitations of Soviet equipment (see inset). Gorizont satellites have only six C-band transponders for a maximum of 20,000 telephone channels, one Ku-band transponder currently used for television transmission, and one L-band transponder used for maritime mobile communications. In contrast, INTELSAT satellites have up to 46 smaller, active transponders, for a total of 120,000 telephone channels and three television channels. The Soviets have chosen to use their only high-frequency transponder, the Ku-band, for television transmission only. The Soviets lease the lower-frequency, C-band transponders for telephone links, television signals relay, broadcasting, and facsimile transmission.⁸ The C-band transponders, because they operate on a lower

⁸ In 1988, Intersputnik leased from the Soviets four transponders on Stationsar-4 (two for transmitting television and two for telephone services) and two transponders on Stationsar-13 (one for transmitting television and one for telephone services). According to the 18th Intersputnik Board of Governors report, one of the two transponders on Stationsar-4 that Intersputnik uses for television transmission is close to saturation.

frequency, are inadequate for handling the large amounts of data required by many Western businesses. Moreover, if a C-band transponder is leased for television transmission, no other telecommunications signals can be sent over that transponder because the entire transponder capacity is used up by the television signals. This limitation of the C-band transponders could reduce the number of transponders the Soviets could offer for lease during times when demand for television channels is high, such as during international sporting events.

Soviet satellites have an average life of about four years, whereas Western telecommunications satellites last 10 years or more—a consideration for countries that might want to buy a whole transponder or an entire telecommunications satellite. The Soviets have tried, however, to keep the short life of their satellites from being an issue by guaranteeing satellite service for 10 years, offering replacement or backup satellites if necessary.

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Figure 3
US-USSR: Key Satellite Technologies

| | | US Ahead | Equal | USSR Ahead | |
|--|--------------------|----------|-------|------------|--|
| <i>Delivery/Platform Technologies</i> | Power Sources | | ○ | | |
| | Space Logistics | | ○ | | |
| | Propulsion | ○➔ | | | |
| <i>Information Processing/Transmission</i> | Signal Processing | ○ | | | |
| | Telecommunications | ○ | | | |
| <i>Production Technologies</i> | Microelectronics | ○ | | | |

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Although Soviet satellites have high reliability, Intersputnik ground station equipment has a history of malfunctions that have caused breakdowns in transmission. The Soviets are upgrading the ground station equipment in the Intersputnik network (see figure 4) with new, digital channeling equipment designed to improve the quality and efficiency of their telecommunications transmissions. There have been delays in the modernization program, however, due to disagreements between ground station owners and the Hungarian supplier of the equipment over terms and conditions of equipment deliveries. The Soviets have also had problems supplying spare parts for existing ground station equipment. []

The Soviets can more easily intercept telecommunications transmitted by their own satellite than those transmitted via INTELSAT. Establishing East-West telecommunications links using a Soviet satellite gives the USSR fixed transmission routes to monitor and

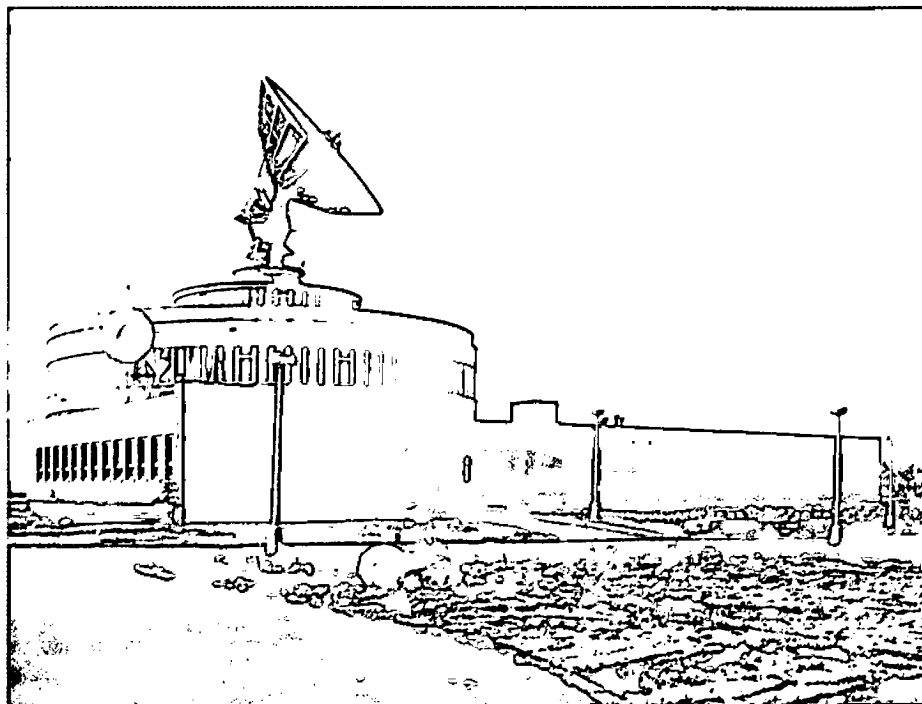
eliminates the need to devote time and resources to targeting INTELSAT channels that carry Western commercial telecommunications. Because much of Intersputnik's telecommunications traffic is routed to the Soviet Union for retransmission to the final destination, the Soviets in many cases have ultimate control over the flow of traffic. In contrast, INTELSAT users control the flow of their telecommunications, ensuring a greater degree of security. According to Western press reports, the largest international provider of electronic mail services has decided not to have any link to Soviet telecommunications systems because it believes the security of its customers' messages could not be guaranteed. []

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Potential Improvements. The Soviets have, according to disclosures made at an international space conference in May 1989 and at the Paris air show in June

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Figure 4. Orbita ground station for transmitting and receiving satellite telecommunications.



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1989, begun offering an improved telecommunications satellite called Glavstar, which addresses many of Gorizont's problems.⁹ Glavstar is described as being similar in size to Gorizont, but having significantly greater capability. Glavstar will carry 12 C-band transponders and 11 Ku-band transponders and will have spot-beam transmission capability. The Soviets have implied that the first Glavstar could be launched by early 1991, although their IFRB filing for next-generation telecommunications satellites gives an operational date in the mid-1990s.

The USSR has made technical advancements in its satellite technology that could be integrated into the Intersputnik system to make it more appealing for transmitting television. For example, the Soviet Ekran geosynchronous satellite, first launched in 1979, emits powerful television signals to small, low-cost ground

terminals. Although the Soviets have used Ekrans, which are direct broadcasting satellites, for domestic broadcasts only, they could offer services via Ekran satellites to Intersputnik customers, especially if foreign interest in direct broadcasting grows. The Soviets have reserved only two colocated geosynchronous positions with the IFRB for Ekran satellites—one is occupied by Statsionar-T and the other is occupied by Statsionar-T2—which are used for domestic television broadcasting in the USSR. If the Soviets were to decide to offer Ekran satellite services internationally, they would have to reserve additional slots in the geosynchronous orbit well in advance.

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⁹ We do not know if the Soviets use the term Glavstar as a generic satellite name, such as HS-376, or as a specific satellite program name, such as Gorizont.

Prospects

Becoming More Profitable

Despite Soviet efforts, Intersputnik's chances of attracting new business telecommunications customers in the West are slim because of Intersputnik's technical

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limitations and INTELSAT's already well-established reputation in world telecommunications. The Soviets may decide to offer low-cost or free telecommunications circuits as part of future bilateral agreements and joint ventures with Western countries in order to expand Intersputnik in the West. However, INTEL-SAT, which has a better reputation for secure telecommunications and a higher degree of reliability than does Intersputnik, undoubtedly will continue to carry the bulk of East-West telecommunications. []

The Soviets presumably do not expect a large financial payoff in the near term as a result of their efforts to market Intersputnik. To date they have not sold any telecommunications satellites or satellite transponders. Because of the inferior quality of its equipment and the limited size of its network, the USSR almost certainly will have to continue offering Intersputnik services free or at below-market value in order to gain new customers. Moreover, Moscow will continue to seek Western telecommunications technology, thus using up the little hard currency it may earn. For example, when the Coordinating Committee on Multilateral Export Controls loosened restriction on exporting digital switching technology to the Soviet Union in the fall of 1988, the Soviets began to negotiate with Western telecommunications firms for the purchase of digital equipment to modernize Intersputnik's ground stations. The Soviets also continue to devote many resources to satellite telecommunications research and development programs. According to Glavkosmos director Aleksandr Dunayev, these programs concentrate on creating telecommunications satellites with multibeam coverage of operation zones, increasing the quantity of transponders on a satellite, utilizing new frequency bands, and using existing frequency bands more efficiently. Nonetheless, the Soviets almost certainly want Intersputnik to become profitable and will raise prices to market levels once they perceive Intersputnik is competitive in the world market. Moscow probably believes that expanding Intersputnik services will help increase sales of other commercial space services. []

The most promising way for Moscow to increase the use of Intersputnik services in the West is by leasing its audio and video channels for transmitting television

newsclips from the Soviet Union and Bloc countries. Western interest in receiving real-time reporting of Bloc events, such as the disasters in Chernobyl¹ and Armenia and the recent Soviet election, is growing. Intersputnik could supply the West with newsclips filmed by Western news services as well as those filmed by Soviet reporters. Western television will come under increasing pressure to supply real-time coverage of events taking place in the USSR and in Bloc countries as public demand for such reporting increases, particularly in light of the political and societal changes occurring in these countries; Western television almost certainly will turn to Intersputnik to supply Soviet newsclips to supplement their regular broadcasting. The United States, Israel, and Japan have already installed, or plan to install, Intersputnik-compatible ground station equipment to obtain access to Soviet television programs. []

The most promising area of continued growth for the Soviets will still be in sales of telecommunications services to the Third World. Intersputnik will probably attract new users among developing countries as their international telecommunications needs grow. Third World countries may consider leasing a few Intersputnik circuits initially, and eventually may buy an entire Soviet satellite at a lower cost than Western satellites. Those developing countries already using INTELSAT may choose to also sign up with Intersputnik to reduce their dependence on the West for telecommunications services. Moreover, in 1987, INTELSAT adopted new procedures governing its members' use of other satellite systems; as a result, the amount of time it takes to obtain INTELSAT approval for using a foreign satellite system has been reduced from six months to several weeks. This may encourage developing countries to use the services of both systems. Like INTELSAT, however, Intersputnik's prospects for attracting new customers in the Third World may be hampered by the rise of regional satellite systems, such as the Pan America Satellite Corporation, which serves Latin America, and the Arab Satellite Communications Organization, which serves the Middle East. []

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Access to Western Data Bases

Even limited Western use of Soviet satellites for telephone, teleconferencing, and data transmission could give the USSR more efficient access to scientific, technological, economic, and military data stored in unclassified US data banks. In order to obtain such data, the Soviets presently telephone from their embassies directly into the US public telecommunications network and use passwords obtained by subscribing to commercially available online information services and data networks. In this way, the Soviets have had access to sensitive US unclassified studies on such topics as nuclear science, military strategy and tactics, computers, telecommunications, and chemical and biological warfare. Because satellite links can handle larger volumes of data in a shorter period of time than can other telecommunications modes, such as landlines, satellite links to the United States would ensure the Soviets of a reliable, efficient end-to-end telecommunications capability. []

The Soviets recently improved the speed and quality of their access to Western information transmitted via INTELSAT through a joint venture signed early this year with a US firm. The joint venture, San Francisco-Moscow Teleport, Inc., connects Soviet computers at the All-Union Scientific Research Institute for Applied Automated Systems (VNIIPAS) with ground station equipment in San Francisco. This link enables the Soviets to dial directly into the US portion of TELENET, an international digital packet network used for teleconferencing, and communicate electronically with TELENET subscribers. It also may give the Soviets various degrees of access to other networks that are accessible through TELENET. Although the Soviets have had access to TELENET via such telecommunications modes as landlines and microwave, a satellite link, which can transfer large amounts of data over a broad-band telecommunications channel, is more efficient. Indiscreet TELENET subscribers in the United States could help the Soviets obtain access to data bases that hold unclassified, but sensitive, information. []

Analyzing US Telecommunications Traffic

The transmission of US commercial telecommunications via Soviet satellites could have additional security implications. Currently, approximately 10 percent

of US nonsecure military telecommunications are transmitted via US civilian telecommunications networks, including INTELSAT satellites. The Soviets monitor INTELSAT telecommunications at facilities in the Soviet Union and Cuba and aboard listening ships at sea. Information gathered from analyzing the origin and destination of US telecommunications traffic transmitted via Soviet satellite, when combined with information from other sources, could give the Soviets insight into US business and military intentions. For example, the Soviets might become more familiar with the flow of telecommunications between foreign locations and military bases in the United States; as a result, they might be able to identify inconsistencies in telecommunications traffic patterns that may occur during times of crisis or heightened US military readiness. The Soviets also may be interested in analyzing the volume and frequency of telecommunications traffic between the United States and other countries for information that, when combined with international trade and financial data, might provide insight into US commercial intentions. []

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Increasing Influence

Increased use of Intersputnik by developing countries for national and international telecommunications will probably lead to increased reception of Soviet-sponsored television transmissions by these countries, giving Moscow a greater opportunity to get its message across to a world audience. In a May 1988 article in *Zhurnalist*, Soviet journalist Rudolf Boretskiy stated that the USSR should tell the world about itself and break down in a convincing and documented manner the "false stereotypes" created by foreign "propaganda." The Soviets undoubtedly would like to present a more benign image to the world and reduce what they perceive as Western dominance in international news reporting in order to present a more balanced perception of the Soviet Union. They almost certainly will alter the content of their broadcasts to fit their audiences in different regions of the world. As has been their practice with radiobroadcasting, they will presumably emphasize the strengths of Soviet policies over those of the West, making it more

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difficult for the United States to challenge Soviet interpretations of world events and foreign policy issues.

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As a way to increase the amount of Bloc broadcasting reaching the West and the Third World, the Soviets have considered pursuing membership in INTEL-SAT. As a condition for its membership, however, the USSR would request increased Western use of Intersputnik. Joining INTELSAT would be consistent with Gorbachev's policy of promoting the free flow of information. It would not, however, give the Soviets much voting power in the organization since Soviet usage of INTELSAT—on which these rights are based—would be very small, nor would it provide them significant financial benefit.

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To avoid being perceived as dependent on the West, the Soviets probably will not join INTELSAT if the West does not agree to use Intersputnik for transmitting some Western telecommunications. They would want any change in the INTELSAT-Intersputnik relationship to appear as a desire by both sides for greater cooperation.

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